

Appl. No.: 10/089,326
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Amendments to the Claims:

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)

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15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Currently Amended) A communications system comprising: a hierarchical mesh network comprising at least a first mesh network tier and a second mesh network tier:

the first mesh network tier comprising a plurality of first mesh network tier subscriber units and a first mesh network tier sink node unit configured to wirelessly communicate with the first mesh network tier subscriber units; and

the second mesh network tier geographically at least partly overlapping the first mesh network tier and comprising a plurality of second mesh network tier subscriber units and a second mesh network tier sink node unit configured to wirelessly communicate with the second mesh network tier subscriber units over a fixed network; and

a dedicated connection between the first mesh network tier sink node unit and a second mesh network tier unit configured to communicate in the second mesh network tier, whereby one of the first mesh network tier subscriber units is configured to be provided with a communication path via the first mesh network tier sink node unit to said second mesh network tier unit.

37. (Previously Presented) A communications system as claimed in claim 36, wherein wireless communication in the first mesh network tier is independent of wireless communication in the second mesh network tier.

38. (Previously Presented) A communications system as claimed in claim 37, wherein wireless communication in the first mesh network tier is in a different frequency band from wireless communication in the second mesh network tier.

39. (Previously Presented) A communications system as claimed in claim 38, wherein the first mesh network tier comprises a plurality of first mesh network tier sink node units with which the first mesh network tier subscriber units are configured to wirelessly communicate.

40. (Previously Presented) A communications system as claimed in claim 39, comprising a plurality of connections, each connection being between a respective first mesh network tier sink node unit and a respective second mesh network tier unit whereby one of the first mesh network tier subscriber units is configured to be provided with a communication path via the respective first mesh network tier sink node to respective second mesh network tier unit.

41. (Previously Presented) A communications system as claimed in claim 40, comprising:
a third mesh network tier geographically overlapping the second mesh network tier and comprising a plurality of third mesh network tier subscriber units and a third mesh network tier sink node unit configured to wirelessly communicate with the third mesh network tier subscriber unit; and

a dedicated connection between the second mesh network tier sink node unit and a third mesh network tier unit configured to communicate in the third mesh network tier, whereby one of the second mesh network tier subscriber units is configured to be provided with a communication path via the second mesh network tier sink node unit to another third mesh network tier unit.

42. (Previously Presented) A communications system as claimed in claim 41, wherein wireless communication in the first mesh network tier and in the second mesh network tier is independent of wireless communication in the third mesh network tier.

43. (Previously Presented) A communications system as claimed in claim 42, wherein wireless communication in the first mesh network tier and in the second mesh network tier is in a different frequency band from wireless communication in the third mesh network tier.

44. (Previously Presented) A communications system as claimed in claim 43, wherein the second mesh network tier comprises a plurality of second mesh network tier sink node units with which the second mesh network tier subscriber units are configured to wirelessly communicate.

45. (Previously Presented) A communications system as claimed in claim 44, comprising a plurality of a connections, each connection being between a respective second mesh network tier sink node unit and a respective third mesh network tier unit whereby one of the second mesh network tier subscriber units is configured to be provided with a communication path via the respective second mesh network tier sink node to a respective third mesh network tier unit.

46. (Previously Presented) A communications system as claimed in claim 36, wherein the said communication is data communication.

47. (Previously Presented) A communications system as claimed in claim 46, wherein the said communication is packet data communication.

48. (Previously Presented) A communications system as claimed in claim 36, wherein the said communication uses an internet protocol.

49. (Previously Presented) A communications system as claimed in claim 36, wherein the said communication in the first mesh network tier is radio communication.

50. (Previously Presented) A communications system as claimed in claim 36, wherein the said communication in the second mesh network tier is radio communication.

51. (Previously Presented) A communications system as claimed in claim 42, wherein the said communication in the third mesh network tier is radio communication.

52. (Currently Amended) A communications unit comprising a first mesh network tier sink node unit comprising a first transceiver configured to wirelessly communicate with at least one of a plurality of first mesh network tier subscriber units in a first mesh network tier, and a second transceiver configured further to communicate in a dedicated connection to a second mesh network tier subscriber unit configured to wirelessly communicate in a second mesh network tier, the second mesh network tier being a fixed network, wherein the second mesh network tier geographically overlaps the first mesh network tier wherein the communications unit is configured to provide a communications path between one of the first mesh network tier subscriber units and the second mesh network tier subscriber unit.

53. (Currently Amended) A method comprising:

providing a wireless communications path between a first mesh network tier sink node unit and at least one of a plurality of first mesh network tier subscriber units in a first mesh network tier;

providing a dedicated communications path between the first mesh network tier sink node and a second mesh network tier subscriber unit in a second mesh network tier, the second mesh network tier being a fixed network, wherein the second mesh network tier geographically overlaps the first mesh network tier; and

providing the at least one of the first mesh network tier subscriber units with a communication path to the second mesh network tier subscriber unit via the first mesh network tier sink node.

54. (Currently Amended) An apparatus for operation in a communications system comprising at least a first mesh network tier and a second mesh network tier,

the second mesh network tier geographically at least partly overlapping the first mesh network tier and comprising a second sink node and a plurality of second communication terminals configured to wirelessly communicate with the second sink node, the apparatus configured to:

operate as a first sink node configured to be in wireless communication with a plurality of first communication terminals; and

operate as a second communication terminal for providing one of the first communication terminals with communications access to the second mesh network tier, and wherein one of the first mesh network tier or the second mesh network tier is a ~~preconfigured~~ fixed network mesh tier.

55. (Previously Presented) An apparatus as claimed in claim 54, wherein wireless communication in the first mesh network tier is independent of wireless communication in the second mesh network tier.

56. (Previously Presented) An apparatus as claimed in claim 55, wherein wireless communication in the first mesh network tier is in a different frequency band from wireless communication in the second mesh network tier.

57. (Previously Presented) An apparatus as claimed in claim 56, wherein the first mesh network tier further comprises a plurality of first mesh network tier sink node units with which the first communication terminals are configured to wirelessly communicate.

58. (Previously Presented) An apparatus as claimed in claim 57, wherein the communications system comprises a plurality of connections, each connection being between a respective first mesh network tier sink node unit and a respective second mesh network tier unit whereby one of the first mesh network tier communication terminals is configured to be provided

with a communications access via the respective first mesh network tier sink node unit to the second mesh network tier.

59. (Previously Presented) An apparatus as claimed in claim 58, wherein the communications system comprises:

a third mesh network tier geographically at least overlapping the second mesh network tier and comprising a plurality of third mesh network tier communication terminals and a third mesh network tier sink node unit configured to wirelessly communicate with the third mesh network tier communication terminals; and

a connection between a second mesh network tier sink node unit and a third mesh network tier unit configured to communicate in the third mesh network tier, whereby one of the second mesh network tier communication terminals is configured to be provided with communications access via the second mesh network tier sink node unit to the third mesh network tier.

60. (Previously Presented) An apparatus as claimed in claim 59, wherein wireless communication in the first mesh network tier and in the second mesh network tier is independent of wireless communication in the third mesh network tier.

61. (Previously Presented) An apparatus as claimed in claim 60, wherein wireless communication in the first mesh network tier and in the second mesh network tier is in a different frequency band from wireless communication in the third mesh network tier.

62. (Previously Presented) An apparatus as claimed in claim 61, wherein the second mesh network tier comprises a plurality of second mesh network tier sink node units with which the second mesh network tier communication terminals are configured to wirelessly communicate.

63. (Previously Presented) An apparatus as claimed in claim 62, comprising a plurality of a connections, each connection being between a respective second mesh network tier sink node

unit and a respective third mesh network tier unit whereby one of the second mesh network tier communication terminals is configured to be provided with a communications access via the respective second mesh network tier sink node unit to the third mesh network tier.

64. (Previously Presented) An apparatus as claimed in claim 63, wherein the said communication is data communication.

65. (Previously Presented) An apparatus as claimed in claim 64, wherein the said communication is packet data communication.

66. (Previously Presented) An apparatus as claimed in claim 54, wherein the said communication uses an internet protocol.

67. (Previously Presented) An apparatus as claimed in claim 54, wherein the said communication in the first mesh network tier is radio communication.

68. (Previously Presented) An apparatus as claimed in claim 54, wherein the said communication in the second mesh network tier is radio communication.

69. (Previously Presented) An apparatus as claimed in claim 60, wherein the said communication in the third mesh network tier is radio communication.

70. (Canceled).

71. (Previously Presented) A communications unit as claimed in claim 52, configured to wirelessly communicate in the first mesh network tier independently of wirelessly communicating in the second mesh network tier.

72. (Previously Presented) A communications unit as claimed in claim 71, configured to wirelessly communicate in the first mesh network tier at a different frequency band from the second mesh network tier.

73-79. (Canceled).

80. (Previously Presented) A communications unit as claimed in claim 52, configured to wirelessly communicate data.

81. (Previously Presented) A communications unit as claimed in claim 80, the wireless data communication being packet data communication.

82. (Previously Presented) A communications unit as claimed in claim 52, configured to communicate using an internet protocol.

83. (Previously Presented) A communications unit as claimed in claim 52, configured to communicate in the first mesh network tier using radio communication.

84. (Previously Presented) A communications unit as claimed in claim 52, configured to communicate in the second mesh network tier using radio communication.

85-86. (Canceled).

87. (Currently Amended) An apparatus comprising a processor and a memory storing instructions that when executed by the processor cause the apparatus to:

provide a wireless communications path between a first mesh network tier sink node unit and at least one of a plurality of first mesh network tier subscriber units in a first mesh network tier;

provide a dedicated communications path between the first mesh network tier sink node and a second mesh network tier subscriber unit in a second mesh network tier, the second mesh network tier being a fixed network, wherein the second mesh network tier geographically overlaps the first mesh network tier; and

provide the at least one of the first mesh network tier subscriber units with a communication path to the second mesh network tier subscriber unit.

88. (Currently Amended) A computer program product comprising at least one computer readable storage medium having computer readable program instructions stored therein, the computer readable program instructions comprising:

a program instruction for providing a wireless communications path between a first mesh network tier sink node unit and at least one of a plurality of first mesh network tier subscriber units in a first mesh network tier;

a program instruction for providing a dedicated communications path between the first mesh network tier sink node and a second mesh network tier subscriber unit in a second mesh network tier, the second mesh network tier being a fixed network, wherein the second mesh network tier geographically overlaps the first mesh network tier; and

a program instruction for providing the at least one of the first mesh network tier subscriber units with a communication path to the second mesh network tier subscriber unit.